



REMARKS:

09/811,705

8/11/03

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With due respect for the Examiner's observations and concerns, I present the following:

Page 2, Para 1 --- Election with traverse of species "A": In Paper No. 5 (07/02/02), there is no language that defines "structural differences" as the rationale for proclaiming the mirror "versions" depicted by Fig.1 and Fig.2 as being species "A" and species "B", respectively. Indeed, there is no explanation whatever; only the statement "claims directed to the following patentably distinct species", which is put forth without any other support. In the original version of CLAIM 9, the fundamental statement is that the mirror of Fig.2, is **virtually the same mirror** as those of Fig.1. The only difference is that the mirrors of Fig.1 are located outside the vehicle; whereas, the mirror of Fig.2 is a combining of the left and right hand mirror's of Fig.1, at a lesser eye distance, and at a common vertical center-line of the mirror of Fig.2, said mirror being located inside the vehicle.

THIS INVENTION, AND IT'S BASIC CLAIMS, revolve around one and only one concept, namely: THE DEVELOPMENT OF THE MIRROR'S SURFACE AS A FUNCTION OF A SERIES OF PAIRED TWO-EYE LINES-OF-SIGHT ACROSS THE MIRROR'S SURFACE. There is no prior art found that proposes such a process of mirror surface development. However, abundant prior art does exist for scores of aspheric mirrors, dating back as far as the early 1960's; virtually none of which have not found their way into "real life" applications, primarily because they produce "funny house" mirror effects having sundry one-eye and two-eye optical distortion characteristics, especially in dynamic applications which are subtle to visualize statically, which are not suitable for use with the human eyes and brain. NOT A SINGLE PRIOR ART MIRROR CONCEPT PROVIDES A MIRROR SURFACE DEVELOPMENT PROCESS THAT DIRECTLY UTILIZES THE TWO-EYE ANISEIKONIA RATIO EFFECT GENERATED WHEN TWO PAIRED EYES FOCUS UPON AN OBJECT REFLECTED FROM AN ASPHERIC (CHANGING CURVATURE) MIRROR, which produces different apparent image sizes as observed by the left and right eyes. **This invention does exactly that, and is thereby unique among all current and prior art, the Japanese and other references notwithstanding**, which allows the two-eye image disparity ratio (Zeta) to be distributed in the most advantageous manner, by intent and design. That's what this is about, and there's nothing like it in the Prior Art. This is a measure of uniqueness.

IN MY RESPONSE OF (01/23/03), I provided a short cursory explanation of the intimate relationship and commonality between "species" "A" and "B". I apologize that said explanation was inadvertently not up to the task. In the process of this response, I have already shown that: 1) The features of species "B" cannot logically patent over the features of species "A", because the factors that control development of their various surfaces are identical; and further 2) in rewriting various claims, it is easily seen that many claims are directly linked between species "A" and species "B". This process clearly shows that there are virtually no structural differences between species "A" and species "B", only that the "A" version is located outside the vehicle's cab and that the "B" version is located inside the vehicle's cab.

ADDITIONALLY, IN McCord's US PATENT 4449786, a precedent is clearly established linking species "A" with species "B", in this current application. The fundamental and unique difference between 4449786 and this current application concept is that in 4449786 the mirror's surface geometry was/is developed by a ONE-EYE LINE-OF-SIGHT procedure; whereas, in this current application concept, the mirror's surface geometry is developed by PAIRED TWO-EYE LINES-OF-SIGHT, whereby significant structural difference is intentionally and objectively generated. Nevertheless, the basic difference between these two unique concepts ends there.

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THERE ARE DIRECT ANALOGIES BETWEEN 4449786 and this current application, as follows: In 4449786, the following Figures are analogous to species "A": Figures 4, 6, 7, 10 - 13, and 15. In 4449786, the following Figures are analogous to species "B": Figures 1 - 6, 8, 9, and 14. These analogies apply as well in the claims of 4449786, wherein the following relate directly to species "A": Claim 1 - 4, 8 - 15, 17 - 21, 32, and 33. The following claims relate directly to species "B": Claim 1 - 13, 16 - 18, 26 - 33. In 4449786, there are a number of redundancies, somewhat in the Figures, but mostly in various Claims. Nevertheless, the analogies with this current application are across the board.

THE SAME EXACT FORMULAS are applicable to both species "A" and species "B", and are used to develop their optical surface structures in an IDENTICAL manner for the right hand portions, and virtually in an IDENTICAL manner for the left hand portions. I BELABOR THIS POINT, BECAUSE IT IS ONE OF SEVERAL FACTS FUNDAMENTAL TO COMPREHENDING THE UNIQUENESS OF THIS INVENTION vrs ALL PRIOR ART. **The only possible manner in which the elements of this invention concept can be made to produce the optimum aniseikonia results is by implementing the LINE-OF-SIGHT concepts of the 4449786 patent, while replacing it's ONE-EYE concept with this TWO-EYE ZETA RATIO concept, which is unique vrs all prior art.**

Among all Prior Art, the TWO-EYE ZETA RATIO concept of this application is the only art disclosed that develops the mirror's surface based upon what the Vehicle Operator's **eyes should preferentially see**, as opposed to what they do see from any other geometrically developed mirror's surface. This fact includes McCord's ONE-EYE line-of-sight concept also.

Page 2, Para 2 --- Claim 9 is acknowledged as being withdrawn, but is re-presented as Claim 19, in amended form.

Page 2, Para 3 --- Applicant accepts withdrawal of species requirements for the various mirror face profile configurations shown by Figure's 5A, 5B, 5C, 5D, 5E, 5F, and Fig.6. It is noted that three optical surface configurations are shown in these seven Figures, namely:

- 1) Fig's. 5A, 5B, 5C, 5D, and 5E: concentric aspheric surface development
- 2) Figure 5F: lateral aspheric surface development
- 3) Figure 6: concentric combined with foreshortening aspheric surface development

Page 2, Para 4 --- The rejection of Claims 1 - 8, due to indefiniteness is addressed by rewriting the Claims as follows, beginning at Examiner's Action on Page 3:

In Claim 1, the range of the ZETA ratios of the apparent image size, as coincidentally observed in the mirror by the vehicle operator's two eyes, is added to the Claim. When the ratio = 1.00, the mirror surface is flat or spherical convex. When the ratio is <1.00, the mirror surface is aspheric (changing curvature). The ZETA ratio diminishes proportional to the curvature of the mirror, and proportional to the object distance to the mirror's reflective surface.

In Claim 2, regarding the ZETA ratios, the foregoing explanation for Claim 1 applies. The principal vehicle is now defined as the "Operator's" vehicle. Also, spatial location of the "Focus Line" is provided, relative to the mirror on the Operators Vehicle.

Claim 3 is cancelled and re-presented as Claim 18. Corrections for Claim 2, apply as well for these Claims.

Page 3 & 4 --- Claims 4, 5, and 6 are withdrawn w/o prejudice.

Page 4, Para 5 --- Applicant acknowledges the Examiner's citation of a portion of 35 U.S.C. 102, and has provided, and will provide further, evidence that it is not appropriate for the concepts of this application.

Page 4, Para 6 -- Claims 7 & 8 have been amended in response to all objections by the Examiner.

The Examiner has provided a Prior Art search list of 17 documents. The Applicants re-search list, provided herewith, of pertinent Prior Art includes 13 documents. Mahin is the sole duplication between the two lists, which gives a total of 29 Prior Art documents bearing on this application. Not a single one of all Prior Art even comes close to interfering with the concepts of this application. Moreover, none of them cause this concept to be "obvious". These Inventors have been addressing automotive mirrors, **from an aspheric point of view**, since at least the early 1960's. **Not a single one has touched upon the aniseikonia problem**, nor offered any potential solution for minimizing said problem, **except the Inventor of this patent application.**

THIS APPLICATION IS BASED UPON THREE, AND ONLY THREE, PREMISES, NAMELY:

1) The ZETA RATIO factor is the ratio of the apparent image sizes as seen in the mirror, or of the magnification factors of said images, as seen by the Vehicle Operator's TWO EYES. When an observer sees two different image sizes in a mirror, the phenomenon is technically defines as **aniseikonia**. The human brain does not like it when the disparity of image sizes, as seen by it's two paired eyes, becomes excessive. This invention is about controlling the aniseikonia progression across the mirror.

2) To calculate the ZETA RATIO factor, the distance from the mirror's reflective surface to the object being observed must be determined, not the distance from the Operators Eyes to the mirror! This is the point upon which BOTH EYES focus, hence the need for a Focus Line.

3) The correct equation for this application is: $m = (-r) / (2p - (-r))$, where (r) is a function of (p) and (m) . These factors are defined as:
(m) = instantaneous magnification factor (dictated by a specific mirror's application and function)
(p) = instantaneous distance (mirror's reflective surface to trailing object (continuously changing))
(r) = instantaneous radius of curvature of the mirror's surface (calculated by above equation)

This above information is sufficient to show that this concept is absolutely unique vrs all Prior Art.

Moreover, this is not some inventor's attempt to "get around" some other patent, in force, or expired, or pending. There is a horrendous problem out there in the real world application of aspheric mirrors to automotive vehicles; even though aspheric mirrors, when intelligently conceived and properly applied, offer the simplest, least expensive, and most effective way to

solve the persistent blind-spot problems with automotive mirrors. This TWO-EYE ZETA RATIO concept is not only a good way to most advantageously distribute the aniseikonia (two-eye astigmatic) optical problem, it is absolutely the very best. I make this statement, having twenty-five years of experience: conceiving, designing, manufacturing, and marketing **aspheric mirrors for automotive vehicles**. I have literally designed and marketed more **types** of aspheric mirrors than all others combined on this Planet. My object is the very best in anti-blind spot mirrors!

In this paragraph 6, you made the statement, quote, "moreover the mirror surface would inherently have a magnification factor ratio due to the eye separation of a driver". This is absolutely true! **And this is the point, the crux of this whole application!** There is a ZETA RATIO magnification factor for every mirror in creation for anyone looking at it having TWO EYES! This includes FLAT mirrors, ~~SPHERICAL~~-mirrors, and ASPHERIC mirrors of all configurations! But that is just a measurement, not how the mirror surface was arrived at, or designed, or constructed. **This application is about back-calculating the instantaneous curvature of the mirror's surface as a function of a desired and specified TWO-EYE ZETA RATIO of the instantaneous magnification factors as observed by the Vehicle Operators paired eyes. No other Prior Art even thinks about doing this.** All other Prior Art is simply adding to the hodgepodge of more-or-less second, third, and fourth-rate aspheric automotive mirrors, including McCord's #4449786 patent, which is second-rate relative to this application concept only.

The Examiner specifically cited three Prior Art references, namely:

JAPANESE PATENT ('978):

This concept has many optical problems. With it's multiplicity of spherical and aspherical surfaces, in random peripheral locations, it is a real "funny-house" mirror.

Acceptable optical transitions between the various surfaces will be virtually impossible.

I discerned no suggestion of iterative procedures, but that is inconsequential in this case.

This concept has aniseikonia written all over it. There is no possibility of it ever being converted to two-eye ZETA ratios. It simply doesn't impact the concept of this Inventor's current application.

KONDO et al ('542): US/Japanese:

This concept, to a great extent, is a take-off on the Volvo/European Aspheric mirror. It uses exponential equations, similar to the Volvo cubic equations.

It is said to have little distortion, but in fact is plagued with image size reduction and distortion, as is the Volvo Aspheric in the peripheral area, but this concept has more distortions.

It is an iterative process, but that's as far as it goes relative to developing the two-eye ZETA ratios. There is zero impact here upon this Inventor's current application.

MANFRÉ et al ('129): PCT/Italy:

This concept is iterative and very complex, involving horizontal and vertical axis developments and possible superposition of one on the other. It focuses on Magnification Angles, and develops the mirror's surface as a function of same, relating the curvature of the mirror to the Eye distance and the desired Magnification factor(s), **but not the object distance!**

Claim 8 discloses an 85 degree field of view. Elsewhere, it is stated that a 60 degree field of view is easily attainable, and all of this with little distortion or image reduction. There seems little congruity between these claims. In any nominal sized auto mirror, if an 85 degree field of view is attained aspherically, very small image sizes will be present and distortion will be rampant.

This concept has TWO-EYE ZETA RATIO factors, just as all mirrors do, but they are by **default, not design, and are useful for analysis only!**

On page 5, line 10, of this PCT, the final formula does not agree with the math progression.

Worse: On page 5, line 15, the statement is made that the formul's only hold true if the Object distance to the mirror is significantly (how much is significant?) greater than the Eye distance to the mirror. This is a real concern, since objects (vehicles) in the "real world blind-spots" are often closer to the mirror than the Eye distance of the vehicle operator for many vehicle passenger car right side mirrors, and most truck right side mirrors.

The materials and construction concepts of this mirror are definitely of a hybrid nature, and are not likely to appear on automobiles anywhere. Many of the manufacturing processes involved are not at all as economical as stated and implied. Plastic mirror faces, even hardened against abrasion, are a big question mark regards scratch resistance over time.

The real question is the TWO-EYE ZETA RATIO process which, as in all other Prior Art, is not disclosed in this invention. This invention, as all others, ignores the important object to mirror relationship, and therefore cannot produce the ZETA ratios. Manfre's concept does not impact this Applicants current application.

Page 5, Para 7:

Claims 10, 12-15, and 17, have been amended in response to the Examiner's objections.

Claims 11 and 16 are withdrawn.

New Claims 18 and 19 have been introduced.

Amendments (or canceled/withdrawn) of all Claims herewith is comprised of (8 pages).

Amendments to five FIG's. (on 4 sheets herewith) are as follows:

FIG.2 --- Added X-X and Z-Z axis symbols.

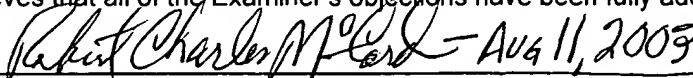
FIG.6 --- Added X-X and Y-Y axis symbols.

FIG.7 --- Added X-X and Y-Y axis symbols.

FIG.8 --- Added X-X axis symbols.

FIG.9 --- Added X-X and Z-Z axis symbols.

SUMMARY: The concepts and Claims of this application are "unique" vrs. all Prior Art. The Applicant believes that all of the Examiner's objections have been fully addressed.


Respectfully, Robert Charles McCord, Inventor: DATE